

314345

24225

3 Hours / 70 Marks

Seat No. 

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- Instructions* – (1) All Questions are *Compulsory*.  
(2) Answer each next main Question on a new page.  
(3) Illustrate your answers with neat sketches wherever necessary.  
(4) Figures to the right indicate full marks.  
(5) Assume suitable data, if necessary.  
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

1. Attempt any FIVE of the following : 10
- List any four applications of extrusion.
  - Define co-rotating and counter rotating twin screw extruder.
  - State the usefulness of embossing unit in calendering process.
  - State the reason why life jackets are made with closed cell foam.
  - State the working principle of extrusion blow moulding machine.
  - List any four materials processed in calendering.
  - State need of finishing of plastic products.

P.T.O.

- 2. Attempt any THREE of the following :** **12**
- a) State any four advantages of twin screw extruder over single screw extruder.
  - b) Draw and explain working of single screw extruder.
  - c) Describe manufacturing of pipe with neat diagram.
  - d) Explain the concept of intermeshing and non intermeshing twin screw extruder with neat diagram.
- 3. Attempt any THREE of the following :** **12**
- a) Identify the extrusion process where film is manufactured by blowing a polymeric bubble. Draw and explain the process.
  - b) Suggest the extrusion process to produce recycled granules. Explain the process with neat diagram.
  - c) Suggest the method to manufacture PET bottle. explain the process with diagram.
  - d) Identify the continuous extrusion blow molding method where alternate mould shuttle to encapsulate parison. Draw and explain the process.
- 4. Attempt any THREE of the following :** **12**
- a) State the function of following equipments in wire and cable coating.
    - i) Unwinding station
    - ii) Preheating station
    - iii) Spark tester
    - iv) Eccentricity measuring station.
  - b) State the significance of roll crowing, roll bending and roll crossing.
  - c) Describe reaction injection moulding process with neat diagram.
  - d) Describe ram accumulator type extrusion blow moulding method with neat diagram.

- e) State the function of following auxiliary equipments in calendering process.
- i) gauge measuring device.
  - ii) take off unit
  - iii) cooling drums.
  - iv) Winding unit.

**5. Attempt any TWO of the following : 12**

- a) Explain injection blow moulding process with neat diagram. State any four advantages of injection blow moulding method.
- b) Draw and explain L-type, inverted L-type, Z-type calender roll configuration. State the significance.
- c) Describe thermocol sheet manufacturing process with neat diagram. Justify the statement, "Thermocol is a heat insulating material."

**6. Attempt any TWO of the following : 12**

- a) Explain spin welding technique with neat diagram. State any four applications of the technique.
  - b) Describe step by step hot plate welding technique with neat diagram. State any four applications of the technique.
  - c) Identify the welding technique where plastic components get welded with ultrasonic sound. Draw and explain the process. State its any two applications.
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